Environmental Assessment

For The Proposed Relocation of the Juniper Golf Course

to Public Lands Administered by the Bureau of Land Management
Under a Recreation and Public Purposes Act Lease/Patent

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ABBREVIATIONS AND ACRONYMS

AUM - Animal Unit Month
BLM - Bureau of Land Management (U.S. Department of Interior)
COID - Central Oregon Irrigation District
CUP - Conditional Use Permit
EPA - Environmental Protection Agency
FAA - Federal Aviation Administration
GCMD - Golf Course Maintenance Department
IPM - Integrated Pest Management
N - Nitrogen
NEPA - National Environmental Policy Act
ODF&W - Oregon Department of Fish and Wildlife
OMD - Oregon Military Department
OSPR - Open Space Park Reserve
P - Phosphorus
RMP - Resource Management Plan (i.e., 1989 Brothers/LaPine Resource Management Plan)
ROW - Right of Way
R&PP - Recreation and Public Purposes (i.e., R&PP Act)
SHPO - State Historic Preservation Office
UGB - Urban Growth Boundary
USDA - United States Department of Agriculture

EA NUMBER: OR-056-98-186
SERIAL NUMBER: OR-53890
APPLICANT: City of Redmond Public Building Corporation
BLM OFFICE: Prineville District
RESOURCE AREA: Deschutes
EA TEAM LEADER: Janet Hutchison

LOCATION OF PROPOSED ACTION:
The proposed action would occur approximately two miles southwest of the Redmond Airport. The legal description is: That portion of land described as Township 15 South, Range 13 East, Section 32, NE¼ and the NW¼, lying east of the Burlington Northern railroad, and north of the Central Electric Co-op electric transmission line, Willamette Meridian, Deschutes County, Oregon.

I. PURPOSE AND NEED

The City of Redmond through the non-profit, Redmond Public Building Corporation has applied to acquire public land for the purpose of relocating the Juniper Golf Course. The proposed site comprises 181.34 acres and is situated south and west of the Deschutes County Fairgrounds. The objective of the Juniper Golf Course is to provide the public with a low cost golfing opportunity.

Background

The City of Redmond acquired the property for the existing Juniper Golf Course by deed from the Federal Aviation Administration (FAA) in 1954. The existing Juniper Golf Course opened in 1952 as a 9-hole course and was later expanded to an 18-hole course. This golf course is leased by the city through the non-profit, Redmond Public Building Corporation, to the Juniper Golf Club. The term of the lease is 50 years and will expire in the year 2006. This lease includes 130 acres that was conveyed to the city by the FAA. An additional 40 acre parcel included in the Juniper Golf Course, was conveyed to the City of Redmond by the BLM for park purposes, under provisions of the Recreation and Public Purposes (R&PP) Act.

The current lease rate for the FAA portion of the course is $1.00 per year. This rate has allowed the city to offer a golfing opportunity to the public for relatively low fees. The existing course is located along Sisters Avenue, east of U.S. Highway 97 (see Figure 1: Existing Location Juniper Golf Course).

The current application by the City of Redmond for a lease/patent under the authority of the R&PP Act, is one of many different land use and transportation proposals in this general area. These proposals are in various stages of development; however none have been approved by BLM or other managing agencies and all are subject to further review. Thus, the proposed action covered by this Environmental Assessment (EA) is the first in line.

Need

The R&PP application submitted by the City of Redmond states that the City of Redmond, through its airport manager, has begun planning for the development of the existing Juniper Golf Course property when the lease terminates in 2006. It further states that the City of Redmond is expanding and that the current golf course location now needs to move in order to allow for future industrial development.

The ownership and management responsibilities for the property containing the existing Juniper Golf course are unique for the City of Redmond. Although the parcel is owned by the city, a controlling interest is held by the FAA and managed with revenues held in the Airport Fund. The parcel is considered airport property and has been identified in a conceptual master plan, for development of a business park in a campus setting with green span areas of open space.

The FAA deed for the 130 acre portion of the course contains restrictions that require the City of Redmond to retain the property in perpetuity and to collect fair market value from all lease agreements. The existing lease, and its advantageous rate, will expire in 2006. The city estimates that the fair market value of the new lease after 2006 will increase costs to such an extent that low cost public golfing opportunities in Redmond will be lost. The history of the existing Juniper Golf Course site and the lease provisions that have led the City of Redmond to seek a new golf course location are explained below.

In 2006, the City of Redmond estimates the land value of the existing Juniper Golf Course will be $15,000 to $20,000 per acre, resulting in an annual lease payment in excess of $200,000, based on the 130 acre property. At a lease payment in excess of $200,000, the City of Redmond estimates that green fees could rise from $32 on weekends and $20 during weekdays to $50 and $36, respectively. These prices are roughly equivalent to more expensive resort courses in the area, such as the two 18-hole courses at the Eagle Crest Resort (see Table 1, page 12). Family membership dues could increase from $75 per month to approximately $100 per month to meet expenses. At these projected prices opportunities for low cost golfing in Redmond would be limited to a single 9-hole private course. Replacement of the 30-year-old irrigation system at the existing course would also contribute to increased green fees in the future.

II. PROPOSED ACTION AND ALTERNATIVES

The following sections in this EA will outline the proposed action and alternatives, environmental consequences of each proposed action, and proposed mitigation measures.

Proposed Action

The proposed action is to allow the City of Redmond to continue to provide a public golfing

opportunity at a reasonable price. The City of Redmond, through the Redmond Public Building Corporation, has applied to acquire 181.34 of public land. The site would provide for the relocation of the Juniper Golf Course. A lease would be used to authorize the development of the golf course with an option to purchase the property upon completion of development. The proposed site is located adjacent and south of the Redmond city limits and urban growth boundary (UGB) (see Figure 2: Proposed Location Juniper Golf Course).

The authority for the lease/patent of public lands is provided by the Recreation and Public Purposes (R&PP) Act. The R&PP Act authorizes the sale or lease of public lands for recreational or public purpose projects to state and local governments and qualified non-profit organizations. Under the provisions of the R&PP Act, government entities are entitled to BLM managed lands for recreational purposes at no cost.

The City of Redmond proposes to annex the site and develop the project in accordance with a Plan of Development that would likely include the following improvements:

* An 18-hole par 72 golf course;
* A practice driving range;
* Putting greens and putting course;
* A small clubhouse/pro-shop;
* A connection to city water and sewer for the clubhouse;
* A perimeter fence;
* Parking area;
* Golf cart storage building;
* Maintenance facilities;
* A well for irrigation water, and
* Ponds or other water features

Upon completion, the new golf course would be operated by the Juniper Golf Club Corporation on behalf of the City of Redmond Public Building Corporation.

The 40 acre parcel at the existing Juniper Golf Course that was conveyed by BLM would be maintained by the city as a park or revert back to BLM management, as required by the R&PP patent granted to the City of Redmond in 1954. The remainder of the existing golf course would likely be zoned and developed for industrial land use as part of the Master Plan for airport facilities. The review and approval of this development would be accomplished through the City of Redmond's planning process and statewide planning goals.

No-Action

The City of Redmond would continue to operate the Juniper Golf Course at the present location, at least until the year 2006. After this point, the existing golf course could remain in place, or it could be reconfigured or closed permanently due to community expansion needs based on the Master Plan for airport facilities. The 181.34 acres of BLM managed public lands south of Redmond urban growth boundary would not be leased under a R&PP Act for a new golf course. This parcel of BLM managed public land would be retained in Federal ownership. Existing uses such as livestock grazing, wildlife habitat, and dispersed recreation would continue.

Alternative Site Summary

The City of Redmond has considered five alternative site locations and evaluated the parcels in terms of public opinion, zoning, size, proximity to Redmond and feasibility of development. Other BLM managed lands adjacent to the proposed action were also considered. The alternative sites were considered to be inferior because of physical limitations, location, poor access, lack of utility services and adverse public opinion.

Conformance With Applicable Land Use Plan

The affected public lands are located in an area included in BLM's Brothers/La Pine Resource Management Plan (RMP), dated July 1989. During the development of the RMP, the City of Redmond requested that certain BLM managed public lands located south of the airport be reserved for community expansion and other public purposes. This input was carried through in the final RMP where the BLM identified several sections of federal land south of the airport as "*Public lands which have been identified for possible transfer or exchange to local governments as needed to accommodate community expansion and other public purposes*." (see Figure 3: Land Tenure, Brothers /LaPine RMP)

The Land Tenure portion of the RMP further designated all BLM managed public lands in Central Oregon as either Zone 1, Zone 2, or Zone 3. Generally, Zone 1 lands are those that have high public resource values and will be retained in public ownership; Zone 2 lands have the potential for high public resource values and may be exchanged for lands with higher public values. Zone 3 lands are areas that may be suitable for disposal through transfer to another agency, exchange, or public sale. The RMP identifies the entire 25,000 acre block of federal lands east of U.S. Highway 97 between Bend and Redmond as Zone 2. As stated in the RMP, such lands may be retained in federal ownership or considered in exchange for lands with higher public resource values or transferred through the Recreation and Public Purposes Act. Management direction established by the plan provides for the consideration of public purpose proposals under the R&PP Act on an individual basis, to determine conformance to land use plan and to minimize conflicts with other resources and users.

III. AFFECTED ENVIRONMENT

This section of the report presents relative resource components of the existing environment which comprises the baseline for the affected area.

Physiographic Features

The proposed site is located in the northern margin of the High Lava Plains physiographic province, which extends to the south and east. The property is situated in close proximity to the Deschutes-Columbia Plateau province, which extends to the north. Both of these geomorphic provinces are volcanic in origin. The terrain of these provinces is typically arid rolling plains with flat sandy basins separated by basalt rock outcrops.

This semi-arid region lies in the rain shadow of the Cascade Mountains. Precipitation is low (8-12 inches annually) and occurs mainly in the winter and spring months. Summers are very dry. There is no surface water on the site. Well logs from the area indicate an estimated groundwater depth of about 350 feet.

The elevation of the proposed sites is about 3,100 feet and varies by no more than 20 feet on the entire tract. It is a very gently rolling site of small rocky ridges and sandy depressions. Soils consist of sandy pumice with rocky outcrops. The sandy basins have little surface rock associated with them while the adjacent areas are characterized by large embedded rock forms.

Land Use

Both the existing Juniper Golf Course and the proposed site are located on the eastern edge of the City of Redmond, in Deschutes County. The current population of Redmond is about 12,000 people, which is an approximate increase of 70 percent in the last nine years. Deschutes County's population is the fastest growing of all Oregon counties.

The existing Juniper Golf Course is located within the Redmond city limits, between a rapidly developing industrial area and the Redmond Municipal Airport. U.S. Highway 97 and the Burlington Northern Railroad form a boundary between the majority of the city and the Golf Course and Redmond Airport.

The proposed site is outside, but adjacent to the Redmond city limits and urban growth boundary and east of U.S. Highway 97 and the Burlington Northern-Santa Fe railroad. The Deschutes County Fairground is located directly northeast of the proposed site. Development related to the Fairgrounds has brought a city street and infrastructure within close proximity of the proposed golf course. In the year 2001, the City proposes to improve SE 19th Street to the northeast corner of the proposed site. The existing and proposed sites are located in or near areas that are predominantly zoned by the City of Redmond for industrial use.

A proposal in the Redmond Comprehensive Plan Update would annex the site and extend the urban growth boundary around the proposed golf course with a zoning designation of Open Space Park Reserve (OSPR). The Plan has been completed by the Redmond Community Development Department and is pending approval by the Urban Area Planning Commission and the Redmond City Council. Location of the proposed golf course inside the UGB would allow for the use of city infrastructure services such as sewer connections.

Various other land uses occur in the general project area, including:

- The new Deschutes County Fairgrounds complex located immediately to the northeast;
- Oregon Military Department's (OMD) training exercises on BLM manage public lands south and east of the Redmond airport;
- Several electrical utility lines;
- The existing North Unit Main Canal, which is located parallel and approximately 3 miles east of U.S. Highway 97, and

Conceptual ideas of various land use *proposals* include the following:

- A golf course and residential resort located on private lands in section 16, approximately 3 miles southeast of the proposed golf course site, which will include one or more rights of way (ROW) approvals for roads and utility access across BLM managed lands in the vicinity;
- A southerly expansion of the fairgrounds onto BLM managed public lands immediately east of the proposed golf course site;
- A recreation park on BLM managed public lands immediately south of the existing fairgrounds;
- An extension of 19th street south to connect with U.S. Highway 97;
- A by-pass of U.S. Highway 97 through the area to the east of Redmond and the existing Highway 97 corridor;
- A pedestrian/non-motorized trail along the North Unit Main Canal; and
- Expansion of the Redmond Municipal Airport in the long-term future.

Soils

The two main soil types present on the subject property include Stukel-Rock Outcrop-Deschutes complex (142B) with small pockets of Deschutes-Houstake complex (33B). According to the USDA-Natural Resources Conservation Service, the Deschutes series soils consist of well-drained soils formed in loess and ash. The subsoil is grayish brown and light grayish brown sandy loam 14 inches thick over basalt. The Deschutes-Houstake soil complex is considered a high value farmland soil type when irrigated. However, the subject parcel currently has no water rights and is unirrigated.

Vegetation

The proposed site supports an overstory of western juniper. Many of these trees are quite old. Numerous younger trees (less than 100 years old) occupy the interspace areas between the older junipers. The mid-story is sagebrush and rabbitbrush, and the understory is a low density of mixed forbs, bunchgrasses, and cheatgrass. There is a cryptogamic crust (a dense mat of mosses and lichen) where soils are not disturbed, especially in the rocky outcrop areas.

Threatened and Endangered Plants

A special status plant survey conducted by the BLM indicates that there are no special status plant species found or expected to occur on the subject property (see Appendix 1 - Plant Species).

Wildlife

A variety of resident and migrating animal species exist in the proposed site for the new golf course. Resident wildlife include pronghorn antelope, mule deer, coyotes, porcupines, skunks, rabbits, bats, other small mammals, raptors, songbirds, and various reptiles.

The North Unit Main Canal located approximately two miles to the east provides water to the area from April through October. This water provides an opportunity for a variety of wildlife to use this area that would not normally be found in a juniper woodland and sagebrush environment. Some of the species that have occurred here and have the potential to use the proposed golf location include: Lewis Woodpecker, pinyon jay, loggerhead shrike, Northern Goshawk, and a variety of waterfowl.

Red-tailed hawks, and great horned owls are the most common raptors using the area. Two red-tailed hawk nests occur within two miles of the proposed golf course location, and great horned owls are common throughout the area but nest sites are unknown.

The proposed golf course location is used little by mule deer, but is important to pronghorn antelope on a year-round basis. The proposed site and the area surrounding the Deschutes County Fairgrounds is home to approximately 50 antelope year-round. During winter the herd increases to more than 120 antelope. The North Unit Main Canal is dry during the winter months allowing antelope to travel and forage freely throughout the area. The newly located Deschutes County Fairgrounds site and portions of the proposed golf course site were burned in a wildfire several decades ago. This old burn area is used heavily by antelope as foraging habitat. In addition, recent ground disturbance due to fairgrounds development has created a forb rich environment which is preferred forage by pronghorn antelope. Antelope movement is generally unrestricted to the south and east, where there is continuous habitat, but is restricted to the west and north by the railroad, U.S. Highway 97, developed industrial areas, the Deschutes County Fairgrounds and the Redmond Municipal Airport.

Several species of bats also occur in this area but no surveys have been completed and there are no known areas of importance within the proposed site. Bats would most likely use the area as foraging habitat and watering in the canal. The lava outcrops and caves located in the area have the most potential for bat use and may provide year round habitat for several bat species.

Threatened and Endangered Animals

A biological evaluation (BE) for listed, proposed, and special status species was conducted for the proposed project (see Appendix 2). As listed in the BE, the project area contains no habitat designated as "critical" or "essential" for federally listed species.

Grazing

The proposed site is within the Crenshaw Grazing Allotment. The entire Crenshaw Grazing Allotment provides forage in the amount of 656 Animal Unit Months. An animal unit month is the amount of dry forage required to feed one cow with a calf for a one month period. The existing forage on the proposed site is estimated at approximately 21 AUMs.

Recreation

There are several unimproved roads and trails on the proposed site that provide recreation opportunities for off-highway vehicle enthusiasts and sightseers. Other forms of casual recreational uses of this BLM managed public land include dog training, horse back riding, walking, jogging, mountain bike riding, hunting, target shooting, and bird watching. However, since there are few access points into the area from U.S. Highway 97, the area likely does not receive heavy recreational use or visitation.

Cultural Resources

A cultural resource survey, and its associated report, were completed for the public lands considered for lease under the proposed action. The area inspected included the northeast portion of the proposed site and the adjoining public land to the east in Section 33. These surveys located some prehistoric items as well as early 20th century historic refuse. A segment of the Huntington Wagon Road was identified on the adjoining Section 33. The results of the survey concluded that there would be no effect to any historic properties listed on or eligible for the National Register of Historic Places.

Visual Resources

The existing Juniper Golf Course and the proposed site are not located in areas identified by the BLM's 1989 Resource Management Plan as having high or sensitive visual qualities. The existing course is not highly visible from the majority of Redmond, and is most prominently visible from the adjacent Lake Road and Sisters Avenue. The existing course is seen in context with the surrounding industrial development, which consists of large, warehouse type buildings.

The proposed site is not highly visible from surrounding areas. The railroad embankment on the east side of U.S. Highway 97 blocks views of the site from the highway. The character of the site is a gently rolling to flat terrain of juniper woodlands, with open areas of sagebrush and grassland. The landscape is accented by many rock outcroppings formed by basalt pressure ridges. The proposed golf course would be visible from the existing Deschutes County fairgrounds.

IV. ENVIRONMENTAL CONSEQUENCES

This section of the report describes the probable consequences of the action on selected environmental resources.

Land Use/Transportation

Proposed Action

The proposed action would result in the expansion of the City of Redmond's UGB to the south and the addition of 181.34 acres zoned by the city for Open Space Park Reserve (OSPR) . The proposed action would also result in the change of zoning for the existing golf course property on Sisters Avenue from OSPR to an industrial use zoning. Industrial zoning characterizes the adjacent areas.

As identified by the City of Redmond, the future development of the existing Juniper Golf course site may involve the extension or realignment of existing streets as part of the Master Plan for airport development.

No Action

The development of the existing golf course to industrial uses may occur as a result of either the proposed action or the no action alternative. Continued use as a golf course would depend on the financial ability of the Juniper Golf Club to pay the higher lease costs imposed by the FAA deed restriction and/or on the development plans outlined in the Master Plan for airport facilities.

Soils/Vegetation

Proposed Action

With the Proposed Action, approximately 136 acres of juniper woodland would be developed into irrigated fairways, golf greens, and tees. Approximately 45 acres (25 percent) of the proposed site would be left undisturbed. Various non-native grass species would be planted on fairways, putting greens and tee areas. The native vegetation would remain along roughs and perimeter areas.

Some soil and vegetation disturbance would occur within the existing Juniper Golf Course, as it is dismantled and features moved to the new course. Further soil and vegetation disturbance may occur as the 40 acre parcel that was conveyed to the City by BLM in 1954, is redeveloped for some other recreational use.

No-Action

Native vegetation on the proposed site would not be replaced by introduced species utilized for golf course development. Minor increases in soil and vegetation disturbance may occur over time from increased recreational use, as the population of Central Oregon grows.

The 40 acre parcel conveyed by BLM land at the existing Juniper Golf Course would be retained as a golf course, in its present configuration, with few, if any impacts to soils or vegetation.

Wildlife

Proposed Action:

Under this action, approximately136 acres of juniper woodland would be converted to irrigated fairways, golf greens, ponds, buildings, and parking areas. The conversion of natural vegetation would result in a direct loss of habitat for those species dependant on the juniper woodland areas, but may benefit some existing species and promote the use of the area by new species.

Songbird diversity would be expected to increase due to the irrigation and green vegetation of the golf course. Species expected to increase as a result of the golf course proposal include American robin, common flicker, ducks, geese, common coot, and riparian birds such as the red-winged blackbird, song sparrows, and wrens. Juniper trees removed from the proposed site during course development would reduce perching and nesting opportunities for songbirds and raptors. Impacts may occur to nesting songbird species with the expected increase of starlings, crows, and ravens which become common on golf courses.

Nesting raptors could be disturbed during construction activities at the proposed site. Small mammals would benefit from the golf course vegetation which may in turn provide increased foraging opportunities for a variety of raptors.

Pronghorn antelope that currently use the area on a year-round basis would be displaced as a result of the proposed action. In addition, the wintering herd of antelope would be impacted by reduced acreage in their traditional winter use area. Antelope are not tolerant of human presence and would not be expected to frequently use the golf course property. The relatively small amount of land that is used by antelope in this area make it difficult to measure the long term impacts to the antelope herd as a result of the proposed action. Mitigation activities may

be necessary on adjacent areas of public lands to improve the quality of habitat to ensure antelope continue to stay in the area.

No Action:

Under the No-Action Alternative, wildlife currently utilizing the property would be expected to continue to use the area. Some increase in disturbance to wildlife may occur over time, from increased recreational uses of the proposed site and as the human population and pressures increase on public lands.

Threatened and Endangered Plant Species

No threatened, endangered, or special status plant species occur at the proposed new golf course location.

Threatened and Endangered Wildlife Species

Proposed Action

Minimal effects are expected to Threatened and Endangered species as a result of the proposed action (see Biological Evaluation, Appendix 2).

No-Action

The juniper woodland and sagebrush habitat of the proposed site would not be developed as a golf course. There would be no impacts to Special Status species using the site if the project is not developed.

Recreation

Proposed Action

The recreational use of the proposed site would change from dispersed recreation in a natural setting to golfing. The existing dispersed uses such as horseback riding, vehicle use, dog training, target shooting, etc., would be displaced if the site was developed as a golf course. However, other BLM managed public lands in the area would be available to support dispersed recreational use.

Although an exact determination of green fees has not been made, the city expects the course fees to be the same in the future (adjusted for inflation) as the existing Juniper Golf Course, relative to other courses in the region. Family memberships could increase, to help offset the cost of bond financing for site development.

The 40- acre parcel conveyed by BLM at the existing Juniper Golf Course would be retained by the city for park purposes. However, the specific use of this land has not yet been determined.

No-Action

Dispersed recreational activities would continue to occur on the proposed site and on the adjacent public lands.

If the golf course does not relocate, it will continue to operate until 2006, when the lease expires. If the course remains in place, it may require significant reconfiguration to allow for the extension of streets and infrastructure for the industrial development of the adjacent lands.

In addition, a restriction in the deed requires the City to retain the property in perpetuity and to collect fair market value from all lease agreements. The applicant estimates the projected land value of the existing course to be $15,000 to $20,000 per acre in the year 2006. The annual payment for lease rental for this 130 acre property is expected to be in excess of $200,000.

With a lease payment in excess of $200,000, the City of Redmond estimates that green fees could rise from $32 on weekends and $20 during weekdays to $50 weekends and $ 36 weekdays. As shown in Table 1, these projected prices would limit low cost golfing opportunities in Redmond. In addition, the City of Redmond has estimated that it will cost $1,000,000 to replace the 35 year old irrigation system at the existing golf course, further increasing the cost of golfing at the existing Juniper Golf Course. However, as shown in Table 2, low cost golfing opportunities would still be available at several area courses, including The Greens in Redmond (a 9-hole course), Crooked River Ranch, and Meadow Lakes in Prineville. It is important to note that most of these low to moderate cost golfing opportunities would be outside the Redmond area.

Table 1. Green Fees at Redmond Area Golf Courses

Course Name	Course Length	Green Fees	Location
Juniper	18 Holes	$32 for 18 holes $20 for 9 holes	Located in Redmond
The Greens at Redmond	9 Executive Holes	$15.00 for 9 holes	Located in Redmond
Eagle Crest Resort	18 Holes	$49 for 18 $31 for 9	Located west of Redmond
Eagle Crest Ridge	18 Holes	$49 for 18 $31 for 9	Located west of Redmond
Eagle Crest Mid-Irons	Short 18 Hole Course	$32	Located west of Redmond

Table 2. Green Fees at Low to Moderate Cost Central Oregon Golf Courses

Course Name	Course Length	Green Fees	Location
Meadow Lakes	18 Holes	Weekdays: $22.00 for 18 holes $15.00 for 9 holes Weekends: $32.00 for 18 holes $17.00 for 9 holes	Prineville
Crooked River Ranch	18 Holes	Weekdays: $25.00 for 18 holes $15.00 for 9 holes Weekends: $30.00 for 18 holes $17.00 for 9 holes	Crooked River Ranch
Nine Peaks	18 Holes	$22 for 18 holes $12 for 9 holes	Madras
Orion Greens	9 Holes	$15.00 for 9 holes $12.00 after 4pm	Bend

Cultural Resources

Proposed Action

The project would result in additional development in an area used previously by Native Americans during summer months and by military personnel and settlers along the Huntington Road, a regional trade route. This information was received as an unrecorded oral account from elders of the Confederated Tribes of Warm Springs during a site visit to the nearby Redmond Caves in the spring of 1998.

Development of the site could reveal the presence of artifacts.

No-Action

No impacts to archeological resources would be expected. Any cultural resources identified on site would probably remain at their current location.

Range/Grazing

Proposed Action

The proposed site is located within the Crenshaw Grazing Allotment which contains a total of 656 animal unit months (AUM's) of forage allocation. The grazing operator was notified of a potential transfer in federal ownership in September 1997 and signed a waiver agreeing to the possibility of a reduction in grazing privileges. The issuance of an R&PP lease and

development of the proposed golf course would preclude livestock grazing on a portion of the grazing allotment. This would reduce the grazing capacity by 21 animal unit months, a loss of approximately 3% of the total available forage in the allotment.

The proposed action would require that pasture fences within the Crenshaw allotment be reconfigured.

No-Action

This alternative would allow for the continuation of authorized livestock grazing on the property, with the existing pasture configurations.

Visual

Proposed Action

The development of a golf course would create irrigated areas consisting of open fairways, greens and tees. The proposed action would introduce built features such as clubhouse buildings, irrigated fairways, parking lots, etc. that would contrast with the otherwise naturally appearing setting. Areas of natural rock features and native vegetation would remain along the edges of the irrigated areas. Ornamental trees and shrubs would also be introduced into the landscape design altering the natural appearance of the area.

However, visual resource impacts of the proposed golf course would be minimal, due to the absence of views from U.S. Highway 97 or other major travel routes. The proposed golf course would also be viewed in context with the nearby Deschutes County Fairgrounds development, thus minimizing the degree of contrast with the existing setting. The area north of the proposed site is rapidly being developed for industrial and commercial uses.

The 130 acres subject to FAA deed restrictions at the existing Juniper Golf Course would likely be developed for light industrial uses with associated roads, landscaped areas and infrastructure. The remaining 40 acre parcel conveyed to the city by BLM would be retained as open space for park purposes.

No-Action

This alternative would preserve the visual characteristics of the juniper woodland and native vegetation on BLM managed lands at the proposed site. The existing Juniper Golf course would remain until 2006, in an irrigated park-like setting surrounded by light industrial development.

Water Quantity

Proposed Action

There would be no net increase in surface water or groundwater consumption within the

Central Oregon area with implementation of the proposed action.

It is estimated that a total of 100 acre-ft of irrigation water would be required for the proposed golf course. A Central Oregon Irrigation District water right for the 67.1 acre-ft of water would be transferred from the existing course to the new site. The balance of approximately 35 acre-ft of water would be transferred from a municipal water right currently held by the City of Redmond.

In addition, supplemental water may be provided to the proposed golf course via a new well at the proposed site. This new well would replace the well currently being used at the existing Juniper Golf Course which is permitted for 350 gallons per minute. Capping of the existing well and drilling a new well is permissible as long as the water from the new well is drawn from the same groundwater aquifer as the old well.

A new irrigation system would be computerized and equipped with a weather station that would provide a measurement of the daily evapo-transpiration rates. Other features of the system include, more efficient sprinkler heads, flow meters, and variable frequency drives. These features would provide for constant pressure, better coverage, and contribute to a more efficient use of water and electricity.

No-Action

If the project were not developed, water would continue to be derived from the COID water right and the operating well to sustain the existing course until the facility was closed permanently, redesigned or relocated to another area. There would be no net increase in surface water or groundwater consumption within the Central Oregon area with implementation of the no-action alternative.

Water Quality

Proposed Action

Based on the following information, it is likely that there would be no impact on surface or ground water quality as a result of golf course construction or maintenance. If transport of chemical compounds occurred either through the soil profile or via surface runoff, they would likely be very small quantities and well below threshold limits established by the EPA.

Several types of chemicals are applied to golf courses, including fertilizers and pesticides. Pesticides are widely used in golf courses to maintain the quality of turf. These pesticides include insecticides, fungicides, and herbicides. The fate of fertilizers and pesticides may include: volatilization to the atmosphere, transport by surface water, attachment to the soil particles, plant uptake, breakdown by microbial activity, and/or they may remain in a liquid solution and continue to leach through the soil (Starrett, 1992; Wan, et al., 1996).

Although agriculture is the largest user of pesticides in North America, turfgrass is typically the

most intensively managed biotic system, and golf courses are treated with pesticides at rates that are among the highest of all crops (Smith and Bridges, 1996; Barbash and Resek, 1996). The major concern about pesticides in the environment is their potential entrance into drinking water sources by movement in surface water through runoff and leaching into groundwater from the treated site (Smith and Bridges, 1996; Wan, et.al., 1996). Nitrogen (N) and phosphorus (P) in fertilizers are of primary concern because they are commonly applied to turfgrass areas and can have detrimental effects on the environment (Starrett, 1992).

The potential effects of high pesticide application rates on ground-water quality beneath golf courses are exacerbated by the fact that soils used for tees and putting greens are constructed for maximum infiltration and percolation of water through the rooting media. Additionally, soil sterilization is recommended during construction for weed and disease management. Increased infiltration rates coupled with soil sterilization substantially reduces the capacity of the soil to either retain or transform the applied compounds. These characteristics of the root zone mixture could result in rapid movement of pesticides through the rooting mixture, allowing for a potential source of contamination of the effluent water from the greens (Smith and Bridges, 1996; Barbash and Resek, 1996). Indeed, a study performed in 1990 demonstrated a positive relation between the rates of pesticide application and the frequencies of detection in ground water beneath different areas of golf courses examined in Cape Cod, Massachusetts (Barbash and Resek, 1996).

Several studies have indicated that very small quantities of chemical compounds applied to golf courses are transported. However, in most cases mobilization of the compounds occurred with heavy irrigation treatments. In cases where irrigation was light to moderate, the compounds were well below the EPA threshold levels (Starrett, 1992; Wan, et al, 1996; Ryals, et al, 1998; Miltner, et al, 1996)

Several studies identify thatch as very important in the retention and degradation of most pesticides and fertilizers and when transported, those amounts were near the minimum detectable level (Smith and Bridges,1996; Cisar and Snyder,1996). Thatch was identified as serving as an important environmental buffer, intercepting and cycling fertilizer N and preventing a large portion of the N from reaching the soil. In addition, most of the applied pesticide remained in the thatch layer and disappeared with time, presumably by microbial degradation.

Environmentally sound management practices are necessary to minimize movement of the applied chemical compounds to surface and ground waters. Understanding the relationships among the properties of chemical compounds, degradation, mobility, and management practices is necessary to maintain water quality. Timing, rate, and total amount of chemical compound applied must be considered (Horst, et al, 1996).

The Golf Course Maintenance Department (GCMD) for the current Juniper Golf Club has proposed a set of recommendations that seek to provide environmental excellence in the

planning, design, construction, and maintenance of the new Juniper Golf Course (See Voderberg, 1999, for full environmental principles document) (see Appendix 3). The GCMD is strongly recommending the club adopt these guidelines (Voderberg, pers. comm). The Juniper Golf Course Board and the Redmond Public Building Corporation are expected to adopt the environmental principles in the very near future.

The recommendations include an emphasis on design of the irrigation, drainage and retention systems to provide efficient use of water and protection of water quality. An on-site weather station would provide daily weather information so that water application rates are only a replacement of water loss due to evapo-transpiration. Thus, the probability of over-watering and leaching of pesticides or fertilizers to groundwater is very low. In addition, several strategies would be employed in the application of nutrient products that would reduce the potential for contamination of ground or surface water. These include, but are not limited to: use of slow release material; proper timing of application to ensure plant use and uptake, and; returning of clippings to reduce supplemental demand. Although there is currently no surface water on the proposed site, surface water features, such as ponds, would be constructed and would be a closed system. In the area of constructed surface water features, the following measures would be employed to protect these surface water resources: 1.) no treatment zones within 15 feet of the pond edge, 2.) establishment of grasses at the pond edge to eliminate erosion potential and provide for uptake of chemical compounds, and 3.) catch drains or positive grading to avert potential run-off.

The principles of Integrated Pest Management (IPM) would be employed, which is a system that relies on a combination of common practices of preventing and controlling pests such as weeds, diseases, and insects. The process includes determining the damage threshold level that the pest can be tolerated, changing the conditions to prevent or discourage recurrence of the problem and, where damage thresholds are met, selecting a combination of control strategies to suppress the pest populations with minimal environmental impact. Control measures include biological, cultural, physical, mechanical, and chemical methods. Non-chemical control measures would focus on practices such as the introduction of natural pest enemies (parasites and predators), utilizing syringing techniques, improving air movement, soil aerification techniques, and mechanical traps. The selection of chemical control strategies would be utilized only when non-chemical control measures are inadequate.

No-Action

If the project were not developed, the current golf course would continue to be maintained and the turf managed through the use of fertilizers and other chemicals consistent with Integrated Pest Management until the facility was closed permanently, redesigned or relocated to another area. It is likely that there would be no impact on surface or ground water quality as a result of continued maintenance of the golf course in its current location. If transport of chemical compounds occurred either through the soil profile or via surface runoff, they would likely be very small quantities and well below threshold limits established by the EPA.

Cumulative Impacts

General

The subject property is located in an urbanizing area adjacent to the Redmond urban growth boundary. The development of the Redmond industrial park and the Deschutes County Fairgrounds has resulted in the conversion of many acres of open juniper woodland and rangeland. The development of the proposed site into a golf course would further contribute to the loss of this type of landscape adjacent to the City of Redmond. This landscape type (open juniper woodland) is common throughout the 25,000 acre block of BLM managed land east of U.S. Highway 97 between Bend and Redmond. However, the loss of this habitat may have impacts on specific wildlife species which reside in and around the proposed project area.

The area north of the proposed site is zoned for industrial development, and is becoming more urbanized with the development of industrial parks and the Deschutes County Fairgrounds. If the proposed golf course is developed, it would continue this trend.

Various other land uses occur in the general project area. These uses are listed above under Land Uses in the Environmental Impacts section, and are illustrated in Figure 4 - Vicinity Map.

There are conceptual ideas in various land use proposals for the general project area. These are also listed above under Land Uses in the Environmental Impacts section.

The development of the proposed golf course would not have a growth inducing effect through the creation of additional roads. The cumulative impact of the proposed action combined with some of the proposed land uses listed above, would have an impact on the adjacent public lands. It is likely that the BLM managed public lands in the project vicinity would be identified in the future for community expansion needs. Indeed, these needs were identified in the 1989 Brothers/La Pine RMP, which designated part of this area for possible transfer to the city for the purposes of community expansion. The cumulative, combined effect of the proposed action and a reasonably foreseeable mix of the above proposals would also have broader range of impacts on recreation use and wildlife as described below.

Wildlife

Cumulative impacts can be measured in many ways and becomes a difficult task when trying to assess these impacts on wildlife. Currently, there are many proposals directed toward the area that lies between the North Unit Main Canal and Highway 97 between Redmond and Bend. These proposals are listed above and are also shown in Table 3. This table shows the potential cumulative impact on the natural environment as it exists today. Individually, each of the possible future actions would have a different impact on wildlife, and likewise any combination of these actions could significantly change the environment enough to change the entire composition of animal species using this area.

In general, each impact would have a direct change to the existing environment (e.g. disturbance or alteration of existing vegetation patterns), but there is consequential impact to the surrounding habitat due to increased human presence, vehicular use, expanded recreation, noise, and a change in plant and animal species. Ultimately, this change in natural condition results in habitat fragmentation or a complete elimination of habitat for certain species.

The proposed golf course would result in loss of habitat for pronghorn antelope using the area. The area used by antelope west of the canal equals about 12,000 acres, but a smaller area (probably 5000 acres) is used more consistently for basic daily needs. The direct loss of habitat from the proposed golf course amounts to 181 acres but the impacts of increased human presence and other factors listed above could encompass 750 acres or more.

Additional development in the area from the numerous other proposals that are reasonably foreseeable would increase the pressure on the herd, by a reduction in the amount of habitat available for basic survival. This includes space for foraging, escape space from predators (capability of movement); fawning areas (need for enough space for herd to break into smaller groups); and wintering areas. At this time, the specific functional components of the antelope's habitat (such as fawning areas) are not known. Additional development, fragmentation of habitat, or increased human presence may reduce these specific critical components of the antelope's habitat, such as fawning areas, and possibly displace or threaten the survival of the herd.

Additional development in the area may also impact other big game, such as deer. Since deer exhibit more tolerance toward human presence, the impact to deer would be less than for pronghorn antelope.

Eventually, mitigation for antelope may have to be done east of the canal where there is better access to more continuous habitat. In turn, this mitigation may affect or be affected by the proposal by the Oregon Military Department for use of this area as a dedicated exercise area.

For other species such as red-tailed hawks the indirect impact is much different than for big game animals. The proposed action could result in increased foraging opportunities for red-tailed hawks due to greater numbers of rodents and small mammals, and result in better breeding and ultimately increase the number of red-tailed hawks in the area. But each additional action or change in the natural environment will eventually have negative effects on raptors using the area. The concept mentioned above applies to many other species using this area such as bats, rabbits, etc..

Table 3: Cumulative Wildlife Habitat Impact

Possible Future Action	Acres of Impact[1]	Range of Impact on Wildlife Habitat[2]
Proposed Golf Course	181	181 - 750 acres
Extension of SW 19th Street	15	15 - 2,000 acres
Fairgrounds Expansion/Raceway	320	320 - 1,000 acres
Huntington Ranch Resort and Rights of Way	655	655 - 2,000 acres
Military Use	Varies	Mostly short term/small acreage
Bike Trail on the Canal	10	10 - ?? acres
Quarry Interchange	25	25 - 320 acres
Private Lands Developed	1,200	1,200 - 3,600 acres
RMP - Community Expansion	5,500	5,500 - 10,000 acres

1 - Direct impact or removal of habitat due to project (i.e., footprint of project)
2 - These numbers represent the estimated range of impact expected beyond the direct impact of the converted, disturbed, or otherwise altered habitat, from the proposed future action.

Recreation

The combination of land development and road construction in the area would likely lead to increased access to public lands from a greater number of paved or improved roads. The area has generally not received high levels of recreational use, and has not been impacted by the dumping, vandalism, etc., common in other more easily accessible areas of BLM managed land. While the cumulative impact would include an increase in recreational access, which may be considered a beneficial impact for recreationists, it may also lead to expansion of user created roads and trails in the area, with accompanying impacts to soils, vegetation, and wildlife.

The cumulative impacts of the anticipated land use proposals described above, may have the effect of increasing visitation and trail use, both motorized and non-motorized, to the adjacent public lands. There may also be an increase in the number of permit applications for commercial use of public lands for recreation purposes.

The increased human presence brought about by more recreation oriented development may also impact the continued use of the adjacent public lands by the Oregon Military Department for military training exercises.

Grazing

The combination of the proposed golf course development and the proposed expansion of the Deschutes County Fairgrounds (or other proposed development) would reduce the grazing privileges on the Crenshaw Grazing Allotment by 57 AUMs. The combination of the golf course development and other developments on BLM lands in the area would likely require the relocation of allotment fences and installation of cattleguards to ease public access and prevent stray livestock.

Mitigating Measures

Water Resources

The proposed golf course would be developed in accordance with the Environmental Principles for the Development and Maintenance of Juniper Golf Club (a new course), a component of the overall revised Plan of Development, dated April 4, 2000. The project would comply with all appropriate regulatory requirements. The golf course would implement an Integrated Pest Management Plan or similar process to minimize the use of pesticides, herbicides, and fertilizers.

Wildlife

If raptor nest sites are found during project planning/construction, these sites would be protected. The nest tree would be left in place, and all construction activities within ½ mile of any raptor nests would cease for the duration of the breeding period, approximately March 1 through August 1. The BLM wildlife biologist may allow construction to resume earlier if a survey determines the protection is no longer necessary.

The applicant would construct rangeland type fences along the south boundary line of the proposed site, and on the east side approximately 40 feet east of the proposed site boundary. The east fence would allow for the proposed future extension of SW 19th Street. These fences would help define the area and prevent future encroachment on BLM lands. The fence would be designed to keep cows out, yet allow wildlife to cross. Rangeland fences would be constructed with wires 18, 24, 30, and 40 inches from the ground. The top and bottom wire would be barbless, the others would be barbed.

The proposed golf course property would have no developed and designated public access to public lands. The applicant would construct a security fence along the north and east boundary of the site, to prevent unauthorized motor vehicle access on the golf course. The fence would consist of posts that would be threaded with a single steel cable. Along the east side of the proposed golf course the fence would be located 40 feet west and parallel to the section line.

Western juniper trees, particularly older and larger trees, would be preserved as reasonable to the function of the golf course, similar to the landscaping at the existing Juniper Golf Course .

Cultural Resources

Any human remains or cultural and/or paleontological resources discovered as a result of the undertaking shall immediately be reported by telephone to the BLM authorized officer. All activities in the immediate area of such discovery shall be suspended until written notification is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer, in consultation with a qualified cultural resource specialist to determine appropriate actions to prevent the loss of significant cultural or scientific values.

Visual Resources

All proposed buildings would be earth tone in color.

Forest Products/Minerals

The City would keep BLM informed during all phases of golf course design and construction. The City would coordinate with the BLM during the clearing phase of the project, to accommodate the salvage of resources such as juniper wood, native vegetation transplants, and lava rock collection. The City would contact the BLM forester and geologist at the Prineville District Office with at least 30 days notice prior to any site clearing.

V. NO IMPACT ITEMS

Fisheries and timber resource would not be impacted by the proposed action or alternatives. The following critical elements were considered, but will not be addressed because they would either not be affected by No-Action and the Proposed Action, or are not present on the subject property.

Agricultural Lands, Prime or Unique
Air Quality
Areas of Critical Environmental Concern
Environmental Justice
Flood Plains
Native American Religious Concerns
Wastes, Hazardous or Solid
Wetlands/Riparian Zones
Wild and Scenic Rivers
Wilderness

VI. SCOPING PROCESS

On March 11, 1998, the BLM published a Notice of Realty Action in the Federal Register for the classification of the property under the R&PP Act. The notice declared that the lands are not needed for Federal purposes and are considered suitable for lease or conveyance to the City of Redmond. The notice also stated that the proposal is consistent with BLM land use planning, and would be in the public interest. No comments were received during the 60 day comment period, and the classification became effective on May 11, 1998.

During the period of March 31 to April 15, 1999, BLM published a Notice in local newspapers (Bulletin and Redmond Spokesman), informing the public of a comment period on a Draft Environmental Assessment. No comments were received.

VII. PERSONS/AGENCIES CONSULTED

Ed Fitch, Mayor, City of Redmond
JoAnne Sutherland, Interim Redmond City Manager
Ron Bryant, Redmond Public Building Corporation
Bob Quitmeier, City of Redmond, Planning Director
Jeff England, City of Redmond, Department of Public Works
Dave Voderberg, Golf Course Superintendent, Juniper Golf Club
Redmond City Council
Board of Directors, Juniper Golf Club
Deschutes County Community Development Department
Deschutes County Commissioners
Deschutes County Road Department
Oregon State University Extension Service
Oregon Department of Fish and Wildlife
Oregon Department of Transportation
USDA, Natural Resources Conservation Service
Ralph & Cathey Davidson, Grazing permittee

PREPARERS: BLM Staff
JoAnne Armson, Wildlife
Paul Schmidt, Wildlife
Steve Castillo, Forestry
Ron Gregory, Archeology
Ron Halvorson, Botany
Janet Hutchison, Lands
Michelle McSwain, Hydrology
Teal Purrington, Livestock Grazing
Greg Currie, Recreation

NEPA requirements met:

/s/ JC Hanf Acting for _____ _____
Marci Todd, Environmental Coordinator Date

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Voderberg, Doug, Personal Communication. Telephone conversation 12/14/99.

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APPENDIX 1: PLANT SPECIES

Achillea millefolium
Agropyron sp.
Allysum allysoides
Arabis sp.
Artemisia tridentata
Astragalus purshii
Bromus tectorum
Carex rossii
Chaenactis douglasii
Chrysothamnus nauseosus
Chrysothamnus viscidiflorus
Cryptantha circumscissa
Epilobium paniculatum
Erigeron filifolius
Eriogonum ovalifolium
Eriophyllum lanatum
Erysimum sp.
Festuca idahoensis
Holosteum umbellatum
Juniperus occidentalis
Koeleria cristata
Leptodactyoln pungens
Machaeranthera canescens
Oryzopsis hymenoides
Oryzopsis webberi
Poa secunda
Senecio canus
Sitanion hystrix
Stipa thurberiana
Stipa comata
Tragopogon dubius
Zigadenus venenosus

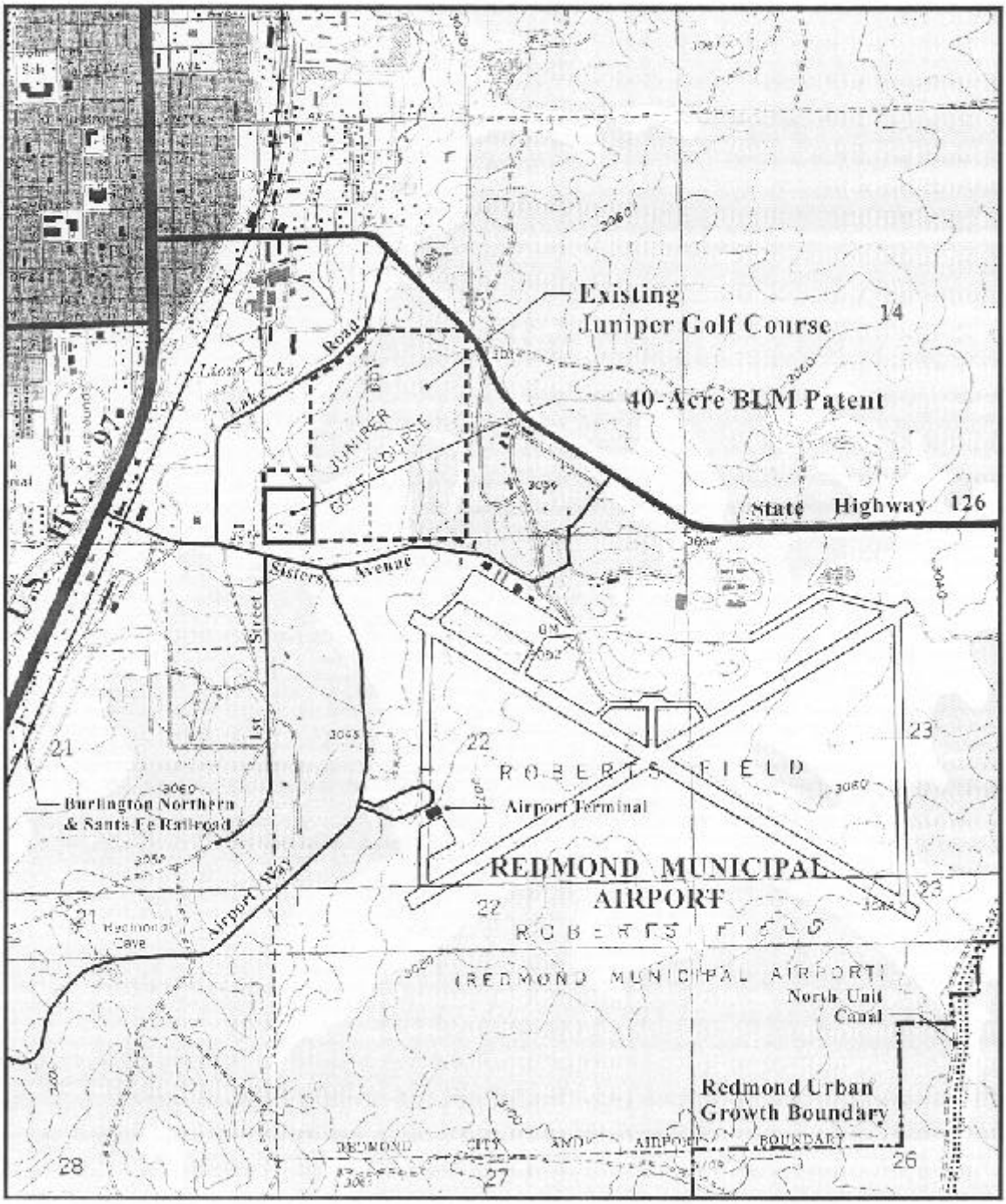

Figure 1 - Existing Juniper Golf Course

Scale:

0 miles 0.5 mile 1 mile

North

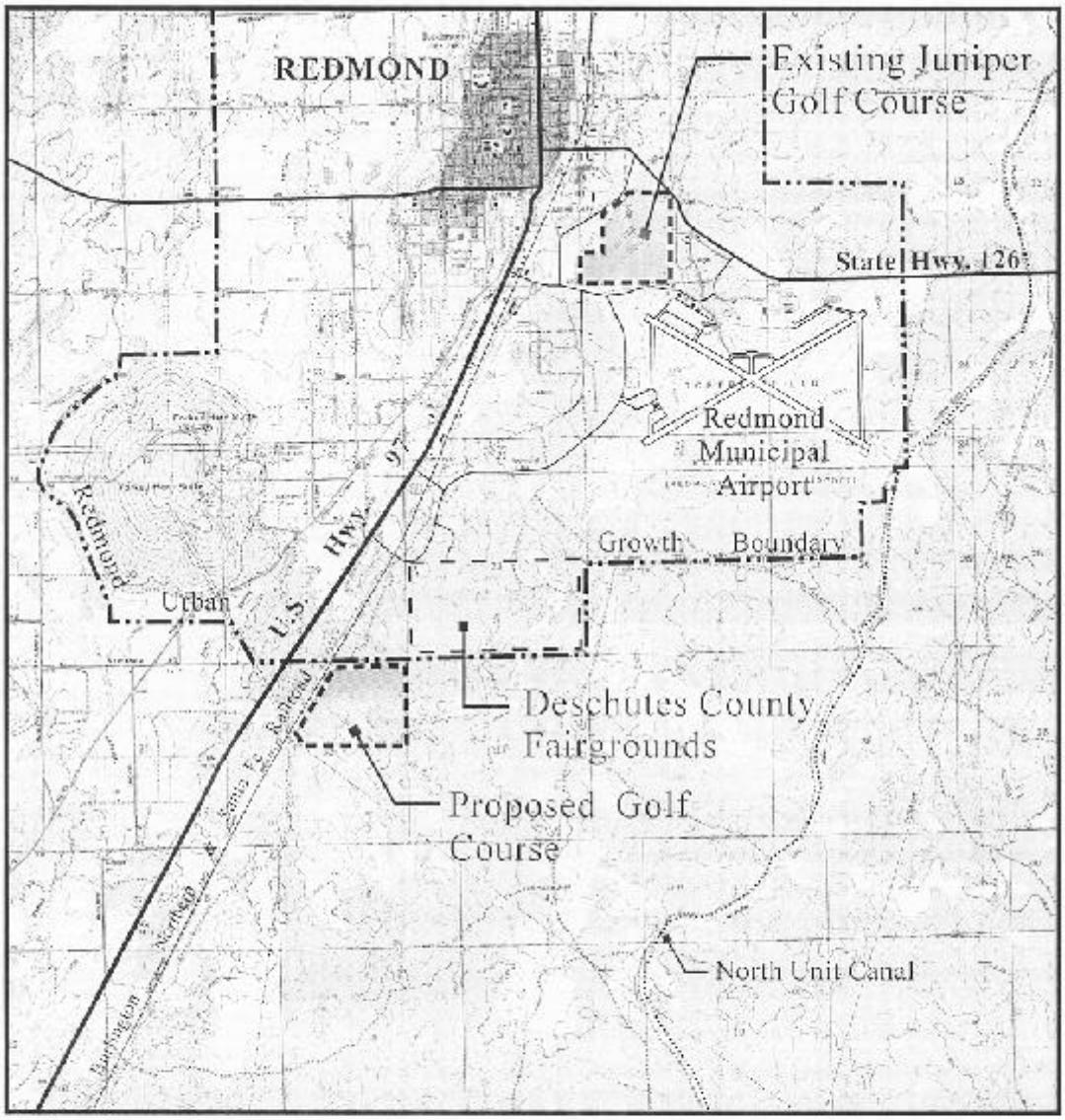

Figure 2 - Proposed Juniper Golf Course Location

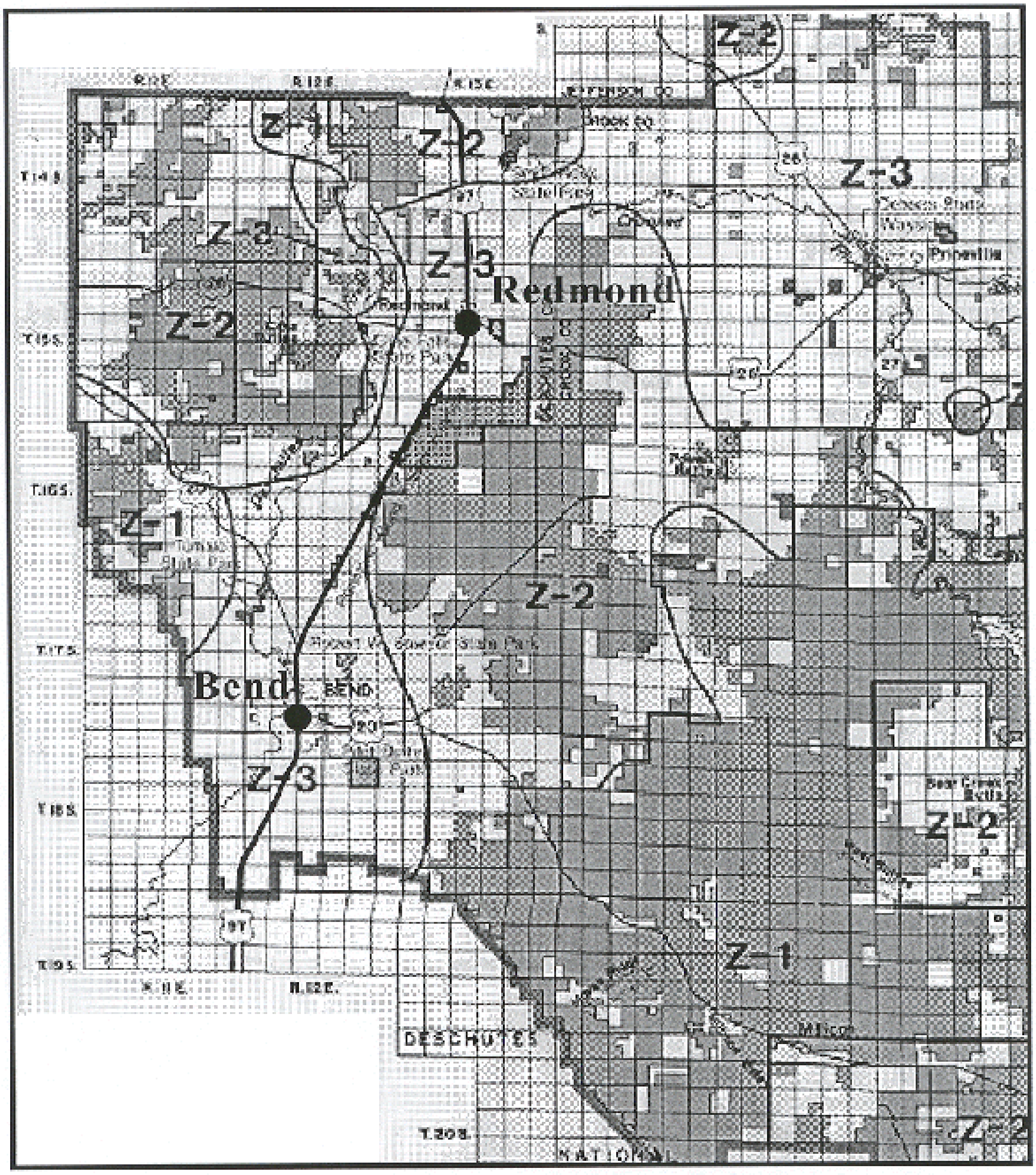

Figure 3 - Land Tenure, Brothers/LaPine RMP

Z - 2	Areas with potential for high public resource values that may be exchenged for lands with higher public values.
(shaded box)	Public lands which have been identified for possible transfer or exchange to local governments as needed to accommodate community expansion and other public purposes.

North

FINDING OF NO SIGNIFICANT IMPACT

Recreation and Public Purposes Application
City of Redmond - Public Building Corporation
Relocation of the Juniper Golf Course
Environmental Assessment (EA#) OR-056-98-186
OR-53890
Prineville District Bureau of Land Management - Deschutes Resource Area

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Summary of Proposed Action and Alternative

An interdisciplinary team of resource specialists at the Prineville District BLM have analyzed a proposal to allow the City of Redmond to continue to provide a public golfing opportunity at a reasonable price. The City of Redmond, through the Redmond Public Building Corporation, has applied to acquire 181.34 acres of public land. The site would provide for the relocation of the Juniper Golf Course. A lease would be used to authorize the development of the golf course with an option to acquire the property upon completion of development. The proposed site is located adjacent and south of the Redmond city limits and urban growth boundary.

A no-action alternative was considered as well as other sites. The City of Redmond has considered five alternative site locations and evaluated the parcels in terms of public opinion, zoning, size, proximity to Redmond and feasibility of development. Other BLM managed public lands adjacent to the proposed site were also considered. The alternative sites were considered to be inferior because of physical limitations, location, poor access, lack of utility services and adverse public opinion.

FONSI Determination

Based on information contained in the EA, and other available information, it is my determination that none of the alternatives would constitute a major federal action significantly affecting the quality of the human environment. My reasons for this determination are:

- There would be no significant irreversible or irretrievable commitment of resources.
- There would be no significant, adverse impacts to water quality or stream channel morphology.
- There would be no identified impacts or issues related to public health or safety.
- Cultural resources would not be expected to be impacted.
- There would be no impact on Threatened, Endangered or Sensitive plants or animals within the affected area.

- **S** Wetlands and flood plains do not exist in the area, and would therefore not be impacted.
- **S** The proposed action is not part of any other action having potential for cumulatively significant impacts to the important or relevant resource values for the area involved.
- **S** The area is not within a Wild and Scenic River boundary or Wilderness Study Area, so no impacts to those resources would occur.

An Environmental Impact Statement is therefore unnecessary and will not be prepared. The proposed action and alternatives are consistent with the existing Brothers/La Pine Resource Management Plan.

Approved:

_____ _____

Marci Todd
Acting Field Manager
Deschutes Resource Area

Date